

Settings Log Page

Page application

Fri, Sep 9, 1994

The settings log for the local station/IRM is implemented using a data stream. A 16-byte record is written into the data stream when a setting is successfully made. This page application facilitates viewing the setting log contents. It is based strongly upon a similar page application that views network frame diagnostics, also written into a data stream, in that case, for each network frame received or transmitted. A new feature supports display of Acnet setting log records in the same data stream.

Display layout

```
C SETTINGS LOG      08/12/94 0810
NODE<0508> #RCVD=   32 LIST<0000>
NODE=0000 - LTNB=0000 TIME=0000
0508 2904 002241F6 0806:06-10+28
0508 2904 002241F6 0806:06-11+28
0508 2904 002241F6 0806:06-12+28
0508 2904 002241F6 0806:06-13+28
0508 2904 002241F6 0806:06-14+28
0508 2904 002241F6 0806:07-00+28
6041 1502 00C10100 0806:07-00+31
0623 2302 0006002D 0806:11-12+29
0610 2306 00000812 0807:00-00+29
0610 2306 00000812 0808:00-00+29
0610 2306 00000812 0809:00-00+29
0610 2306 00000812 0809:59-14+44
```

Fields listed above are the source node# of the setting, the listype# and #bytes shown as two bytes forming a word, the channel# and data shown as two words forming a long word, and the time of completion of the setting action. As in the network frame diagnostics, the time is expressed in hours, minutes, seconds, 15Hz cycles, and milliseconds within the current cycle.

In the example of node 0508 setting diagnostics shown, node 0508 itself initiated settings for analog channel 0022 using listype#41 (engineering units floating point) with 4-byte data, where the first word of the floating point setting data was 41F6. These settings were set every 15 Hz cycle until a setting to clear the enable bit for the local application causing the settings was disabled by using listype#21 to toggle Bit# 00C1. (01 is the digital control type# for toggle.) Node# 6041 is a pseudo node# that indicates the setting command was received via UDP/IP. The next line shows a setting of "generally interesting data" with byte offset 06 that is used for synchronizing the FTPMAN cycle counter with Tevatron clock event 02. Four minutes of time-of-day settings from node 0610 also access "generally interesting data."

Operation

Interrupt on the second row to initiate a one-shot data request in order to capture the most recent setting records from data stream #1 from the node# between the "<" and ">". The number after RCVD shows the number of records received in response to that one-shot request. If the LIST field is nonzero, then send a serial listing of the same diagnostic records displayed to that indicated node#.

Interrupt on the third row to modify the filter parameters that select from the captured diagnostics above. Filtering can be done on the source node#, on the listype# / #bytes, and on the time. (Obviously, only hours and minutes can be specified for the time filter.) Characters

that denote the type of filtering for each filter are used where the "=" sign is indicated. Use "=" to mean equality, "!" to mean inequality, ">" to mean greater than or equal to, and "<" to mean less than. When a filter value field is 0000, that filter is disabled. If more than one filter is enabled, the "AND" of the filter conditions is meant.

When a list of diagnostic lines is displayed on the screen, use the raise/lower buttons to scroll by pages forwards or backwards through the list. Using a one-shot request suitable for a data stream of size 2K bytes, one can capture and display/list up to 124 setting diagnostic records.

Listing format

```
C SETTINGS LOG      08/12/94 0856
NODE<0508> #RCVD= 124 LIST<0576>
NODE=0000 - LTNB=0000 TIME=0000
SrcN LtNb ChanData HrMn:Sc-Cy+ms
0508 2904 002241F6 0806:06-10+28
0508 2904 002241F6 0806:06-11+28
0508 2904 002241F6 0806:06-12+28
0508 2904 002241F6 0806:06-13+28
0508 2904 002241F6 0806:06-14+28
0508 2904 002241F6 0806:07-00+28
6041 1502 00C10100 0806:07-00+31
0623 2302 0006002D 0806:11-12+29
0610 2306 00000812 0807:00-00+29
0610 2306 00000812 0808:00-00+29
0610 2306 00000812 0809:00-00+29
0610 2306 00000812 0809:59-14+44
```

This is an excerpt from the complete 124-line listing showing the same records displayed in the example above.

Acnet settings log

A different type of settings log is maintained for Acnet. Support must be provided at the application level for logging setting activity of Acnet devices. For local stations/IRMs, this means such support is needed for page applications such as the parameter page and the analog descriptor page. The parameter page can initiate settings for D/A's, nominal and tolerance values, and digital control. The analog descriptor page can initiate settings of alarm flags. Both pages have the device name available for log reporting. The method is more fully described in the document Settings Log Implementation as well as the document Settings Log LA.

The afore-mentioned Acnet records are written into the same data stream. This settings log page application displays them with a slightly different format, as shown in the following example:

```
C SETTINGS LOG      09/09/94 1004
NODE<0622> #RCVD=   4 LIST<0000>
NODE=0000 - LTNB=0000 TIME=0000
0622 0102 0424F333  L2GADJ-SET
0622 1602 00900101  K2LPGN-BCTL
0622 1602 00900100  K2LPGN-BCTL
0622 0102 00900021  K2LPGN-SET
```

In place of the time, which is not recorded for the Acnet record format, is the device name

and Acnet property. The display, or listing, shows the device name and the Acnet property using these abbreviations:

Setting	SET
Binary control	BCTL
Analog alarm block	ANAB
Digital alarm block	DGAB

In the example shown, device L2GADJ was set to a value F333, two binary control actions were performed on device K2LPGN, followed by a setting of the same device to the value 0021.

With the normal settings records entered into the same data stream, including closed loop setting activity, it's expected that the queue will wrap in a short time. The Acnet records are logged to a central setting log server, so such entries will more likely be viewed there. The other setting records will be useful as a diagnostic tool for observing settings happening very recently, much as the network frame diagnostic is used for observing recent (often very recent) frame activity.